



# ecology and environment, inc.

International Specialists in the Environment

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Chicago, Illinois 60604  
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September 28, 1995

Ms. Sonia Vega  
U.S. Environmental Protection Agency, Region 5  
77 West Jackson Boulevard  
Chicago, Illinois 60604

Re: Murrell Landfill  
Decatur, Illinois  
CERCLIS ID No.: ILD980901540  
Focused Site Inspection Prioritization (FSIP)  
Contract No. 68-WO-0037  
TDD No.: T05-9503-212

**CONFIDENTIAL**

Dear Ms. Vega:

Enclosed are the final Focused Site Inspection Prioritization (FSIP) report and enclosures for the Murrell Landfill site, Decatur, Illinois. Draft copies of this report were submitted previously to you and Mr. Tom Crause of the Illinois Environmental Protection Agency (IEPA).

The final FSIP is presented in two volumes. Volume 1 contains the Site Evaluation Report (SER). Volume 2 contains the United States Environmental Protection Agency Recommendation Form for the site as Enclosure 1, and a transmittal memorandum and Hazard Ranking System (HRS) scoring sheets as Enclosure 2.

Should you have any questions, please call me at (312) 663-9415.

Sincerely,

Alix Rauschman  
Ecology and Environment, Inc.

xc: Steven Skare, Ecology and Environment, Inc.  
Tom Crause, IEPA

**FOCUSED SITE INSPECTION PRIORITIZATION  
ENCLOSURES 1 AND 2**

**MURRELL LANDFILL  
HILL ROAD RR 8  
DECATUR, ILLINOIS**

**CERCLIS ID No.: ILD980901540**

Prepared for:

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
SITE ASSESSMENT SECTION  
77 West Jackson Boulevard  
Chicago, Illinois 60604**

Date Prepared: September 28, 1995  
U.S. EPA Region: 5  
Contract No.: 68-W0-0037  
Technical Direction Document: T05-9503-212  
Prepared by: Alix Rauschman  
E & E Program Leader: Steven Skare  
Telephone No.: (312) 663-9415



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recycled paper



## **ecology and environment, inc.**

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111 West Jackson Boulevard  
Chicago, Illinois 60604  
Tel: (312) 663-9415, Fax: (312) 663-0791

September 20, 1995

Ms. Sonia Vega  
U.S. Environmental Protection Agency  
Region 5  
77 West Jackson Boulevard  
Chicago, Illinois 60604

Subject: Murrell Landfill  
Decatur, Illinois  
CERCLIS ID No.: ILD980901540  
Focused Site Inspection Prioritization (FSIP)  
Contract No. 68-W0-0037  
TDD No.: T05-9503-212

Dear Ms. Vega:

Ecology and Environment, Inc. (E & E), has prepared the enclosed Site Evaluation Report (SER) for the above-referenced site. Photographs taken during the 1995 E & E TAT site reconnaissance are included in Appendix A of the SER. Appendix B contains 1990 E & E FIT Screening Site Inspection (SSI) analytical results and sampling locations. Appendix C contains FSIP analytical results and sampling locations from the E & E TAT site reconnaissance inspection. Appendix D contains an Endangered Species list for the site region, and pertinent references used in the preparation of this SER are included in Appendix E. Per your request, references not provided include: documents that are currently available within United States Environmental Protection Agency (U.S. EPA) files; copyrighted documents that are currently available in E & E's library, maps produced by either the United States Geologic Survey, or the Illinois State Geologic Survey; and documents created by various state agencies for public use.

E & E reviewed available information and prepared a preliminary Hazard Ranking System (HRS) score for the Murrell Landfill site using PREscore Software (Version 3.0), Publication No. 9450.2200, dated August 1994. Based on E & E's findings, the preliminary HRS score for the Murrell Landfill site is less than 28.50.

The Murrell Landfill site is located on a heavily-forested embankment that was estimated by E & E to be approximately 100 feet higher in elevation than the Sangamon River bank. Also, there were no roads, driveways, or other direct access routes to the Sangamon River within 1 mile of the site. Due to the remote location of the site, it was impossible for E & E sampling team to obtain surface water and sediment samples at the site location that would aid in documenting the potential contamination that could be present at the Murrell Landfill site. Samples were collected approximately 1 to 2 miles downstream of the site where the

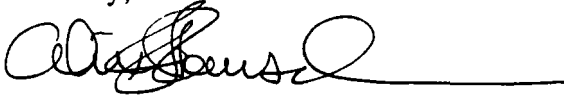
Ms. Sonia Vega  
September 20, 1995  
Page 2

Sangamon River became accessible for sampling. Therefore, E & E recommends that the site receive a low priority designation and that further sampling be conducted at the desired sample locations to properly evaluate the site.

The U.S. EPA Recommendation Form is included in Enclosure 1. The Murrell Landfill's preliminary HRS score is documented in a transmittal memorandum with the HRS scoring sheets and is included in Enclosure 2.

If you have any questions, please call me at (312) 663-9415.

Sincerely,

A handwritten signature in black ink, appearing to read 'Alix Rauschman', followed by a horizontal line.

Alix Rauschman

Enclosures (2)

cc: Steven Skare, E & E Program Leader  
Tom Crause, IEPA Site Manager

**ENCLOSURE 1**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
RECOMMENDATION FOR  
MURRELL LANDFILL**

**CERCLIS ID No.: ILD980901540**

**U.S. ENVIRONMENTAL PROTECTION AGENCY RECOMMENDATION**

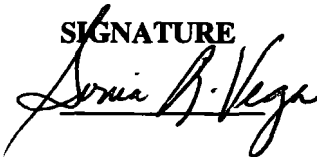
Site Name: Murrell Landfill  
Decatur, Macon County, Illinois

CERCLIS ID No.: ILD980901540

Report Author: Alix Rauschman  
Ecology and Environment, Inc.  
312/663-9415

Program Leader: Steven Skare  
Ecology and Environment, Inc.  
312/663-9415

**U.S. EPA RECOMMENDATION**

	<b>SIGNATURE</b>	<b>DATE</b>
"H": High priority for further site assessment		<u>9-29-95</u>
"L": Low priority for further site assessment	_____	_____
"D": Deferred to other authority (RCRA TSCA, OR NRC)	_____	_____
"N": No further action	_____	_____

**U.S. EPA COMMENTS:**

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**ENCLOSURE 2**

**TRANSMITTAL MEMORANDUM  
WITH SCORING PACKAGE  
FOR  
MURRELL LANDFILL  
DECATUR, ILLINOIS**



# ecology and environment, inc.

International Specialists in the Environment

111 West Jackson Boulevard  
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## MEMORANDUM

DATE: September 28, 1995

TO: Sonia Vega, U.S. EPA

FROM: Alix Rauschman, E & E

SUBJECT: Focused Site Inspection Prioritization (FSIP)  
Site Name: Murrell Landfill  
Location: Decatur, Illinois  
CERCLIS ID No.: ILD980901540

THIS DOCUMENT IS CONFIDENTIAL. Because of its predecisional nature, this memorandum and the attached preliminary Hazard Ranking System (HRS) scoresheets are not to be released to the public.

The FSIP Site Evaluation Report (SER) accompanies this transmittal memorandum and the preliminary HRS scoresheets.

The site has been evaluated to determine the need for immediate removal action as a result of a substantial threat to human health and the environment. E & E recommends the following:

- ☐ The site **does** present a threat that requires immediate removal action.
- ☒ The site **does not** present a threat that requires immediate removal action.

E & E has prepared the attached preliminary HRS site scoresheets for the above-referenced site.

- ☒ The preliminary HRS score is **below** 28.50.
- ☐ The preliminary HRS score is **above** 28.50.



The following is a summary of factors affecting the preliminary HRS pathway scores.

## **WASTE CHARACTERISTICS**

The toxicity/mobility value for the groundwater migration pathway is based on arsenic, which was detected in an off-site adjacent residential well. The toxicity, ecosystem toxicity, persistence, and bioaccumulation values for the surface water overland flood migration pathway are based on the contaminant of concern (arsenic), which was detected in on-site sediment sample collected during the 1990 Ecology & Environment, Inc. (E & E) Field Investigation Team (FIT) Screening Site Inspection (SSI). Arsenic was also detected in a surface water sample collected downstream and off site of the Murrell Landfill site during the E & E TAT 1995 sampling visit. The toxicity value for the soil exposure pathway is based on arsenic, which was detected in on-site soil samples collected during the E & E FIT 1990 SSI. Samples were analyzed for Target Analyte List (TAL) and Target Compound List (TCL) chemicals. Arsenic, a TAL chemical, was detected downstream and off-site of the Murrell Landfill in sediment sample S2 during the E & E TAT 1995 site reconnaissance.

The site is an inactive 6-acre landfill facility that no longer accepts wastes. The site now serves as a storage and maintenance area for Mr. Rueben Murrell, Jr., the site owner's son. Mr. Rueben Murrell, Sr., remains the current site owner of the Murrell Landfill property.

A hazardous waste quantity of 100 was obtained based on the area of the closed disposal facility, which was estimated to be 261,360 square feet.

## **GROUNDWATER MIGRATION PATHWAY**

A release of hazardous substances from the Murrell Landfill site is likely to have occurred based on past site operations. The Murrell Landfill site was used as a dump in the past, and there is no documentation in regard to an engineered liner in the dump area that would prevent potential downward migration of contaminants to groundwater. No containment mechanisms are present at the facility. The majority of the disposal area is grass-covered, but open refuse has been documented on site. There is a potential that the groundwater could be impacted by on-site contaminants, however, the number of residents in the area that use groundwater for drinking water purposes are very low. The groundwater in the a 4-mile radius of the site is utilized by approximately 993 persons who use groundwater from private wells. The more than 98,081 persons residing in Decatur and Harristown, which are located northeast and due north of the site, respectively, utilize surface water from Lake Decatur, located approximately 5 miles northeast of the site.

No on-site monitoring wells are present at the Murrell Landfill site. Off-site monitoring wells samples by E & E FIT in 1990 contained contaminants of potential concern such as arsenic at 8.1 milligrams per liter ( $\mu\text{L}$ ). This concentration is greater than U.S. EPA Maximum Contaminant Levels (MCLs) for arsenic.

## **SURFACE WATER MIGRATION PATHWAY**

A release of hazardous substances to the surface water has been documented. The on-site intermittent stream, which was not present at the time of the E & E TAT 1995 site sampling visit most likely flows south toward the Sangamon River. The Murrell Landfill site is located on the steep banks of the Sangamon River. It is possible that erosion channels could form,

thereby forming a potential route of contamination migration from the site to the Sangamon River.

Samples collected from off-site wetlands located 1.2 miles downstream of the site by E & E in 1995 contained arsenic at lower levels than the concentration encountered in on-site soil samples collected in by E & E in 1990.

During the E & E FSIP sampling, E & E collected one surface water and one sediment sample upstream of the site to be used as background samples. None of the contaminants encountered in samples collected at the Murrell Landfill site exceeded three times the background concentration samples with the exception of arsenic as stated earlier.

The Sangamon River is used for recreational activities including fishing. Palustrine wetlands exist downstream of the site for many miles. The Lincoln Trail Homestead State Park, located approximately 3 miles downstream of the site, along the Sangamon River, may receive contaminants from upstream sources. Threatened and endangered species in Macon County may be subject to contaminant exposure; however, no threatened or endangered species habitats are suspected to be adjacent to the site. The majority of people within a 4-mile radius of the site receive drinking water from Lake Decatur. This lake is located upstream of the site approximately 5 miles and is therefore not affected by the site.

#### **SOIL EXPOSURE PATHWAY**

A release of hazardous substances from the Murrell Landfill to on-site soils has been documented based on past site conditions. Though there is still the remains of debris and other refuse, the site supposedly does not operate as a dump, therefore, there is no further contribution of potential contaminants to the on- or off-site soils. Residents are located within 200 feet of the site, and arsenic was detected in all on-site soil samples during the 1990 E & E FIT SSI. No samples were collected off site on the residential properties.

Approximately 4 workers, who are employed to provide maintenance work at the site, come only occasionally to the landfill. The site is fenced; however, there is a potential for on-site exposure by trespassers entering the site. However, the site is located in a remote rural area. There are approximately 1,000 persons located within 1 mile of the site based on a straight-line distance.

#### **AIR MIGRATION PATHWAY**

Because no air sampling results are available, the air pathway score has not been evaluated. The scoresheet is included as part of the printout in the scoring package. The site is fully vegetated, and no incidences of air contamination have been confirmed. Two complaints in April 1987 involving the burning of garbage were documented in site files.

Record Information

1. Site Name: Murrell Landfill (Murrell Disposal Facility)  
(as entered in CERCLIS)
2. Site CERCLIS Number: ILD908901540
3. Site Reviewer: E & E
4. Date: June 8, 1995
5. Site Location: Decatur/Macon, Illinois  
(City/County, State)
6. Congressional District: 20
7. Site Coordinates: Multiple  
Latitude: 39 49'00.      Longitude: 089 03'30.

Site Description

1. Setting: Rural
2. Current Owner: Private - Individual
3. Current Site Status: Active
4. Years of Operation: Active Site , from and to dates: 1952-1995
5. How Initially Identified: Unknown
6. Entity Responsible for Waste Generation:
  - Unknown
7. Site Activities/Waste Deposition:
  - Industrial Landfill
  - Drum/Container Storage
  - Illegal Dumping

Waste Description

8. Wastes Deposited or Detected Onsite:

- Organic Chemicals
- Oily Waste

Response Actions

9. Response/Removal Actions:

RCRA Information

10. For All Active Facilities, RCRA Site Status:

- Not Applicable

Demographic Information

11. Workers Present Onsite: Yes

12. Distance to Nearest Non-Worker Individual: > 10 Feet - 1/4 Mile

13. Residential Population Within 1 Mile: 1000.0

14. Residential Population Within 4 Miles: 10400.0

Water Use Information

15. Local Drinking Water Supply Source:

- Ground Water (within 4 mile distance limit)

16. Total Population Served by Local Drinking Water Supply Source: 3400.0

17. Drinking Water Supply System Type for Local Drinking Water Supply Sources:

- Municipal (Services over 25 People)

- Private

18. Surface Water Adjacent to/Draining Site:

- Other - Intermittent Stream
- River

1. Site Name: Murrell Landfill (Murrell Disposal Facility)  
(as entered in CERCLIS)
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Latitude: 39 49'00.

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	Score
Ground Water Migration Pathway Score (Sgw)	21.33
Surface Water Migration Pathway Score (Ssw)	34.40
Soil Exposure Pathway Score (Ss)	0.61
Air Migration Pathway Score (Sa)	0.00
-----	
Site Score	20.24

NOTE

EPA uses the terms "facility," "site," and "release" interchangeably. The term "facility" is broadly defined in CERCLA to include any area where hazardous substances have "come to be located" (CERCLA Section 109(9)), and the listing process is not intended to define or reflect boundaries of such facilities or releases. Site names, and references to specific parcels or properties, are provided for general identification purposes only. Knowledge regarding the extent of sites will be refined as more information is developed during the RI/FS and even during implementation of the remedy.

PREscore 3.0 - PRESCORE.TCL File 07/25/94  
GROUND WATER MIGRATION PATHWAY SCORESHEET  
Murrell Landfill (Murrell Disposal Facility) - 09/13/95

PAGE: 2

GROUND WATER MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release to an Aquifer Aquifer: Glacial Aquifer		
1. Observed Release	550	550
2. Potential to Release		
2a. Containment	10	10
2b. Net Precipitation	10	3
2c. Depth to Aquifer	5	5
2d. Travel Time	35	25
2e. Potential to Release [lines 2a(2b+2c+2d)]	500	330
3. Likelihood of Release	550	550
Waste Characteristics		
4. Toxicity/Mobility	*	1.00E+04
5. Hazardous Waste Quantity	*	100
6. Waste Characteristics	100	32
Targets		
7. Nearest Well	50	5.00E+01
8. Population		
8a. Level I Concentrations	**	4.00E+01
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	5.00E+00
8d. Population (lines 8a+8b+8c)	**	4.50E+01
9. Resources	5	5.00E+00
10. Wellhead Protection Area	20	0.00E+00
11. Targets (lines 7+8d+9+10)	**	1.00E+02
12. Targets (including overlaying aquifers)	**	1.00E+02
13. Aquifer Score	100	21.33
GROUND WATER MIGRATION PATHWAY SCORE (Sgw)	100	21.33

\* Maximum value applies to waste characteristics category.  
\*\* Maximum value not applicable.

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors DRINKING WATER THREAT	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release	550	550
2. Potential to Release by Overland Flow		
2a. Containment	10	10
2b. Runoff	25	1
2c. Distance to Surface Water	25	20
2d. Potential to Release by Overland Flow [(lines 2a(2b+2c))]	500	210
3. Potential to Release by Flood		
3a. Containment (Flood)	10	10
3b. Flood Frequency	50	25
3c. Potential to Release by Flood (lines 3a x 3b)	500	250
4. Potential to Release (lines 2d+3c)	500	460
5. Likelihood of Release	550	550
Waste Characteristics		
6. Toxicity/Persistence	*	1.00E+04
7. Hazardous Waste Quantity	*	100
8. Waste Characteristics	100	32
Targets		
9. Nearest Intake	50	0.00E+00
10. Population		
10a. Level I Concentrations	**	0.00E+00
10b. Level II Concentrations	**	0.00E+00
10c. Potential Contamination	**	0.00E+00
10d. Population (lines 10a+10b+10c)	**	0.00E+00
11. Resources	5	5.00E+00
12. Targets (lines 9+10d+11)	**	5.00E+00
13. DRINKING WATER THREAT SCORE	100	1.07

\* Maximum value applies to waste characteristics category.  
 \*\* Maximum value not applicable.



SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
14. Likelihood of Release (same as line 5)	550	550
Waste Characteristics		
15. Toxicity/Persistence/Bioaccumulation	*	5.00E+07
16. Hazardous Waste Quantity	*	100
17. Waste Characteristics	1000	180
Targets		
18. Food Chain Individual	50	0.00E+00
19. Population		
19a. Level I Concentrations	**	0.00E+00
19b. Level II Concentrations	**	0.00E+00
19c. Pot. Human Food Chain Contamination	**	3.00E-05
19d. Population (lines 19a+19b+19c)	**	3.00E-05
20. Targets (lines 18+19d)	**	3.00E-05
21. HUMAN FOOD CHAIN THREAT SCORE	100	0.00

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.

SURFACE WATER OVERLAND/FLOOD MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
22. Likelihood of Release (same as line 5)	550	550
Waste Characteristics		
23. Ecosystem Toxicity/Persistence/Bioacc.	*	5.00E+06
24. Hazardous Waste Quantity	*	100
25. Waste Characteristics	1000	100
Targets		
26. Sensitive Environments		
26a. Level I Concentrations	**	0.00E+00
26b. Level II Concentrations	**	5.00E+01
26c. Potential Contamination	**	0.00E+00
26d. Sensitive Environments (lines 26a+26b+26c)	**	5.00E+01
27. Targets (line 26d)	**	5.00E+01
28. ENVIRONMENTAL THREAT SCORE	60	33.33
29. WATERSHED SCORE	100	34.40
30. SW: OVERLAND/FLOOD COMPONENT SCORE (Sof)	100	34.40

\* Maximum value applies to waste characteristics category.  
 \*\* Maximum value not applicable.

PREscore 3.0 - PRESCORE.TCL File 07/25/94  
GROUND WATER TO SURFACE WATER MIGRATION COMPONENT SCORESHEET  
Murrell Landfill (Murrell Disposal Facility) - 09/13/95

PAGE: 6

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors DRINKING WATER THREAT	Maximum Value	Value Assigned
Likelihood of Release to Aquifer Aquifer: Glacial Aquifer		
1. Observed Release	550	550
2. Potential to Release		
2a. Containment	10	10
2b. Net Precipitation	10	3
2c. Depth to Aquifer	5	5
2d. Travel Time	35	25
2e. Potential to Release [lines 2a(2b+2c+2d)]	500	330
3. Likelihood of Release	550	550
Waste Characteristics		
4. Toxicity/Mobility/Persistence	*	1.00E+04
5. Hazardous Waste Quantity	*	100
6. Waste Characteristics	100	32
Targets		
7. Nearest Intake	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	5.00E+00
10. Targets (lines 7+8d+9)	**	5.00E+00
11. DRINKING WATER THREAT SCORE	100	1.07

\* Maximum value applies to waste characteristics category.  
\*\* Maximum value not applicable.

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors HUMAN FOOD CHAIN THREAT	Maximum Value	Value Assigned
Likelihood of Release		
12. Likelihood of Release (same as line 3)	550	550
Waste Characteristics		
13. Toxicity/Mobility/Persistence/Bioacc.	*	1.00E+07
14. Hazardous Waste Quantity	*	100
15. Waste Characteristics	1000	180
Targets		
16. Food Chain Individual	50	0.00E+00
17. Population		
17a. Level I Concentrations	**	0.00E+00
17b. Level II Concentrations	**	0.00E+00
17c. Pot. Human Food Chain Contamination	**	1.50E-05
17d. Population (lines 17a+17b+17c)	**	1.50E-05
18. Targets (lines 16+17d)	**	1.50E-05
19. HUMAN FOOD CHAIN THREAT SCORE	100	0.00

\* Maximum value applies to waste characteristics category.  
\*\* Maximum value not applicable.

GROUND WATER TO SURFACE WATER MIGRATION COMPONENT Factor Categories & Factors ENVIRONMENTAL THREAT	Maximum Value	Value Assigned
Likelihood of Release		
20. Likelihood of Release (same as line 3)	550	550
Waste Characteristics		
21. Ecosystem Tox./Mobility/Persist./Bioacc.	*	1.00E+06
22. Hazardous Waste Quantity	*	100
23. Waste Characteristics	1000	100
Targets		
24. Sensitive Environments		
24a. Level I Concentrations	**	0.00E+00
24b. Level II Concentrations	**	5.00E+01
24c. Potential Contamination	**	0.00E+00
24d. Sensitive Environments (lines 24a+24b+24c)	**	5.00E+01
25. Targets (line 24d)	**	5.00E+01
26. ENVIRONMENTAL THREAT SCORE	60	33.33
27. WATERSHED SCORE	100	34.40
28. SW: GW to SW COMPONENT SCORE (Sgs)	100	34.40

\* Maximum value applies to waste characteristics category.  
\*\* Maximum value not applicable.

SOIL EXPOSURE PATHWAY Factor Categories & Factors RESIDENT POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
1. Likelihood of Exposure	550	550
Waste Characteristics		
2. Toxicity	*	1.00E+04
3. Hazardous Waste Quantity	*	10
4. Waste Characteristics	100	18
Targets		
5. Resident Individual	50	0.00E+00
6. Resident Population		
6a. Level I Concentrations	**	0.00E+00
6b. Level II Concentrations	**	0.00E+00
6c. Resident Population (lines 6a+6b)	**	0.00E+00
7. Workers	15	5.00E+00
8. Resources	5	0.00E+00
9. Terrestrial Sensitive Environments	***	0.00E+00
10. Targets (lines 5+6c+7+8+9)	**	5.00E+00
11. RESIDENT POPULATION THREAT SCORE	**	4.95E+04

\* Maximum value applies to waste characteristics category.  
 \*\* Maximum value not applicable.  
 \*\*\* No specific maximum value applies, see HRS for details.

## SOIL EXPOSURE PATHWAY SCORESHEET

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

SOIL EXPOSURE PATHWAY Factor Categories & Factors NEARBY POPULATION THREAT	Maximum Value	Value Assigned
Likelihood of Exposure		
12. Attractiveness/Accessibility	100	1.00E+01
13. Area of Contamination	100	6.00E+01
14. Likelihood of Exposure	500	2.50E+01
Waste Characteristics		
15. Toxicity	*	1.00E+04
16. Hazardous Waste Quantity	*	10
17. Waste Characteristics	100	18
Targets		
18. Nearby Individual	1	1.00E+00
19. Population Within 1 Mile	**	4.10E-01
20. Targets (lines 18+19)	**	1.41E+00
21. NEARBY POPULATION THREAT SCORE	**	6.34E+02
SOIL EXPOSURE PATHWAY SCORE (Ss)	100	0.61

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.

## AIR PATHWAY SCORESHEET

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

AIR MIGRATION PATHWAY Factor Categories & Factors	Maximum Value	Value Assigned
Likelihood of Release		
1. Observed Release	550	0
2. Potential to Release		
2a. Gas Potential to Release	500	0
2b. Particulate Potential to Release	500	0
2c. Potential to Release	500	0
3. Likelihood of Release	550	0
Waste Characteristics		
4. Toxicity/Mobility	*	0.00E+00
5. Hazardous Waste Quantity	*	0
6. Waste Characteristics	100	0
Targets		
7. Nearest Individual	50	0.00E+00
8. Population		
8a. Level I Concentrations	**	0.00E+00
8b. Level II Concentrations	**	0.00E+00
8c. Potential Contamination	**	0.00E+00
8d. Population (lines 8a+8b+8c)	**	0.00E+00
9. Resources	5	0.00E+00
10. Sensitive Environments		
10a. Actual Contamination	***	0.00E+00
10b. Potential Contamination	***	0.00E+00
10c. Sens. Environments (lines 10a+10b)	***	0.00E+00
11. Targets (lines 7+8d+9+10c)	**	0.00E+00
AIR MIGRATION PATHWAY SCORE (Sa)	100	0.00E+00

\* Maximum value applies to waste characteristics category.

\*\* Maximum value not applicable.

\*\*\* No specific maximum value applies, see HRS for details.



## WASTE QUANTITY

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

## 1. WASTESTREAM QUANTITY SUMMARY TABLE, SOURCE: Disposal area

a. Wastestream ID	
b. Hazardous Constituent Quantity (C) (lbs.)	0.00
c. Data Complete?	NO
d. Hazardous Wastestream Quantity (W) (lbs.)	0.00
e. Data Complete?	NO
f. Wastestream Quantity Value (W/5,000)	0.00E+00

## WASTE QUANTITY

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

## 2. SOURCE HAZARDOUS WASTE QUANTITY FACTOR TABLE

a. Source ID	Disposal area
b. Source Type	Landfill
c. Secondary Source Type	N.A.
d. Source Vol.(yd3/gal)   Source Area (ft2)	0.00   262000.00
e. Source Volume/Area Value	7.71E+01
f. Source Hazardous Constituent Quantity (HCQ) Value (sum of 1b)	0.00E+00
g. Data Complete?	NO
h. Source Hazardous Wastestream Quantity (WSQ) Value (sum of 1f)	0.00E+00
i. Data Complete?	NO
k. Source Hazardous Waste Quantity (HWQ) Value (2e, 2f, or 2h)	7.71E+01

Source Hazardous Substances	Depth (feet)	Liquid	Concent.	Units
Acetone	< 2	NO	3.1E+04	ppm
Arsenic	< 2	NO	1.2E+01	ppm
Beryllium	< 2	NO	6.5E-01	ppm
Cadmium	< 2	NO	1.4E+01	ppm
Cyanide	< 2	NO	2.5E+01	ppm
Methylene chloride	< 2	NO	2.2E+04	ppm
Tetrachloroethene	< 2	NO	1.3E+04	ppm
Toluene	< 2	YES	8.0E-03	ppm

## WASTE QUANTITY

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

## 3. SITE HAZARDOUS WASTE QUANTITY SUMMARY

No. Source ID	Migration Pathways	Vol. or Area Value (2e)	Constituent or Wastestream Value (2f,2h)	Hazardous Waste Qty. Value (2k)
1 Disposal area	GW-SW-SE	7.71E+01	0.00E+00	7.71E+01

## WASTE QUANTITY

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

## 4. PATHWAY HAZARDOUS WASTE QUANTITY AND WASTE CHARACTERISTICS SUMMARY TABLE

Migration Pathway	Contaminant Values		HWQVs*	WCVs**
Ground Water	Toxicity/Mobility	1.00E+04	100	32
SW: Overland Flow, DW	Tox./Persistence	1.00E+04	100	32
SW: Overland Flow, HFC	Tox./Persis./Bioacc.	5.00E+07	100	180
SW: Overland Flow, Env	Etox./Persis./Bioacc.	5.00E+06	100	100
SW: GW to SW, DW	Tox./Persistence	1.00E+04	100	32
SW: GW to SW, HFC	Tox./Persis./Bioacc.	1.00E+07	100	180
SW: GW to SW, Env	Etox./Persis./Bioacc.	1.00E+06	100	100
Soil Exposure: Resident	Toxicity	1.00E+04	10	18
Soil Exposure: Nearby	Toxicity	1.00E+04	10	18
Air	Toxicity/Mobility	0.00E+00	0	0

\* Hazardous Waste Quantity Factor Values

\*\* Waste Characteristics Factor Category Values

Note: SW = Surface Water  
 GW = Ground Water  
 DW = Drinking Water Threat  
 HFC = Human Food Chain Threat  
 Env = Environmental Threat

No. Aquifer ID	Type	Overlaying No.	Inter- Connected with	Likelihood of Release	Targets
1 Glacial Aquifer	Non K	0	0	550	1.00E+02

#### Containment

No.	Source ID	HWQ Value	Containment Value
1	Disposal area	7.71E+01	10
Containment Factor			10

#### Net Precipitation

Net Precipitation (inches)

N.A.

Aquifer: Glacial Aquifer

Type of Aquifer: Non Karst

Overlaying Aquifer: 0

Interconnected with: 0

# OBSERVED RELEASE

No.	Well ID	Well Type	Distance (miles)	Level of Contamination
1	RW4	Drinking Water	0.010	Level I
2	mw	Monitoring Well	0.000	Level I

Well No.	Hazardous Substance	Concent.	MCL	Cancer	RFD	Units
1	Arsenic	8.1E+00	5.0E+01	2.0E-02	1.1E+01	ppb
2	Arsenic	8.1E+00	5.0E+01	2.0E-02	1.1E+01	ppb

=====

Observed Release Factor	550
-------------------------	-----

Documentation for Well mw:

Assume monitoring well installed on-site. Arsenic concentration  
same as in residential well

Reference:

POTENTIAL TO RELEASE

Containment

-----

Containment Factor 10

Net Precipitation

-----

Net Precipitation Factor 3

Depth to Aquifer

-----

A. Depth of Hazardous Substances 0.00 feet

B. Depth to Aquifer from Surface 23.00 feet

C. Depth to Aquifer (B - A) 23.00 feet

Depth to Aquifer Factor 5

Travel Time

-----

Are All Layers Karst? NO

Thickness of Layer(s) with Lowest Conductivity 23.00 feet

Hydraulic Conductivity (cm/sec) 1.0E-04

Documentation for Hydraulic Conductivity:

Assumption

Reference:

Travel Time Factor 25

=====

Potential to Release Factor	330
-----------------------------	-----



Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
-----	-----	-----	-----
Acetone	10	1.00E+00	1.00E+01
Arsenic	10000	1.00E-02	1.00E+02
Beryllium	10000	1.00E-02	1.00E+02
Cadmium	10000	2.00E-01	2.00E+03
Cyanide	100	2.00E-05	2.00E-03
Methylene chloride	10	1.00E+00	1.00E+01
Tetrachloroethene	100	1.00E-02	1.00E+00
Toluene	10	1.00E-02	1.00E-01

Hazardous Substances Found in an Observed Release

Well No.	Observed Release Hazardous Substance	Toxicity Value	Mobility Value	Toxicity/ Mobility Value
1	Arsenic	10000	1.00E+00	1.00E+04
2	Arsenic	10000	1.00E+00	1.00E+04

Toxicity/Mobility Value from Source Hazardous Substances:	2.00E+03
Toxicity/Mobility Value from Observed Release Hazardous Substances:	1.00E+04
Toxicity/Mobility Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	32

Population by Well

No.	Well ID	Sample Type	Distance (miles)	Level of Contamination	Population
1	RW4	Drinking Water	0.010	Level I	4.00

Well No.	Hazardous Substance	Concent.	MCL	Cancer	RFD	Units
1	Arsenic	8.1E+00	5.0E+01	2.0E-02	1.1E+01	ppb

Level I Population Factor: 40.00

Level II Population Factor: 0.00

Potential Contamination by Distance Category

Distance Category (miles)	Population	Value
> 0 to 1/4	47.0	5.30E+00
> 1/4 to 1/2	0.0	0.00E+00
> 1/2 to 1	0.0	0.00E+00
> 1 to 2	0.0	0.00E+00
> 2 to 3	0.0	0.00E+00
> 3 to 4	0.0	0.00E+00

Potential Contamination Factor: 5.000

Documentation for Target Population > 0 to 1/4 mile Distance Category:

Assumptions were made regarding the populations within each distance category

Reference:

Nearest Well

Well: 1 RW4  
Level of Contamination: Level I  
Distance in miles: 0.01

Nearest Well Factor: 5.00E+01

Resources

Resource Use: YES

Resource Factor: 5.00E+00

Documentation for Resources:

Assumption

Reference:

Wellhead Protection Area

-----

No wellhead protection area

Wellhead Protection Area Factor: 0.00E+00

## SURFACE WATER PATHWAY SEGMENT SUMMARY

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

No.	Segment ID	Segment Type	Water Type	Start Point (mi)	End Point (mi)	Average Flow (cfs)
1	stream	River	Fresh	0.00	0.05	10
2	Sangamon R	River	Fresh	0.05	15.00	101

OBSERVED RELEASE

No.	Sample ID	Sample Type	Distance (miles)	Level of Contamination DW	HFC	Env
1	S2	Aqueous	1.000	Level I	Potential	Level II

Sample No.	Hazardous Substance	Concent.	Units
------------	---------------------	----------	-------

1	Arsenic	3.4E-03	ppb
1	Chloroform	8.0E+00	ppb
1	Methylene chloride	1.6E+01	ppb

Observed Release Factor 550



POTENTIAL TO RELEASE

Potential to Release by Overland Flow

Containment

-----

No.	Source ID	HWQ Value	Containment Value
1	Disposal area	7.71E+01	10

=====

Containment Factor: 10

Distance to Surface Water

-----

Distance to Surface Water: 200.0 feet

Distance to Surface Water Factor: 20

Runoff

-----

A. Drainage Area: 6.0 acres

B. 2-year, 24-hour Rainfall: 2.5 inches

C. Soil Group: B  
Medium-textured soils with moderate infiltration rates

Documentation for Soil Group:

assumption

Reference:

Runoff Factor: 1

=====

Potential to Release by Overland Flow Factor: 210

Potential to Release by Flood

No.	Source ID	HWQ Value	Flood Containment Value	Flood Frequency Value	Potential to Release by Flood
1	Disposal area	7.71E+01	10	25	250

=====  
 Potential to Release by Flood Factor: 250

Documentation for Flood Frequency, Source Disposal area:

Assumption

Reference:

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
-----	-----	-----	-----
Acetone	10	7.00E-04	7.00E-03
Arsenic	10000	1.00E+00	1.00E+04
Beryllium	10000	1.00E+00	1.00E+04
Cadmium	10000	1.00E+00	1.00E+04
Cyanide	100	4.00E-01	4.00E+01
Methylene chloride	10	4.00E-01	4.00E+00
Tetrachloroethene	100	4.00E-01	4.00E+01
Toluene	10	4.00E-01	4.00E+00

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Toxicity Value	Persistence Value	Toxicity/ Persistence Value
1	Arsenic	10000	1.00E+00	1.00E+04
1	Chloroform	100	4.00E-01	4.00E+01
1	Methylene chloride	10	4.00E-01	4.00E+00

Toxicity/Persistence Value from Source Hazardous Substances:	1.00E+04
Toxicity/Persistence Value from Observed Release Hazardous Substances:	1.00E+04
Toxicity/Persistence Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	32

Level I Concentrations

Sample ID: S2  
Sample Medium: Aqueous  
Location: 1.00 miles

Hazardous Substance	Hazardous Substance Concentration	DW MCL Benchmark Concentration	Units
-----	-----	-----	-----
Arsenic	3.4E-03	5.0E+01	ppb
Chloroform	8.0E+00	0.0E+00	ppb
Methylene chloride	1.6E+01	5.0E+00	ppb

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

-----

Sample ID: S2

Distance from the Probable Point of Entry: 1.00 miles

Most Distant Level II Sample

-----

- N/A and/or data not specified



Level I Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
--------	--	------------

- N/A and/or data not specified

Population Served by Level I Intakes: 0.0

Level I Population Factor: 0.00E+00

Level II Concentrations  
-----

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
-----		
- N/A and/or data not specified		

=====

Population Served by Level II Intakes: 0.0

Level II Population Factor: 0.00E+00

Potential Contamination

Intake ID	Average Annual Flow (cfs)	Population Served
-----------	------------------------------	----------------------

- N/A and/or data not specified

Type of Surface Water Body	Total Population	Dilution-Weighted Population
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- N/A and/or data not specified

=====

Dilution-Weighted Population Served  
 by Potentially Contaminated Intakes: 0.0

Potential Contamination Factor: 0.0

Nearest Intake

Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources

Resource Use: YES

Resource Value: 5.00E+00

Documentation for Resources:

assumption

Reference:

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
-----	-----	-----	-----	-----
Acetone	10	7.00E-04	5.00E-01	3.50E-03
Arsenic	10000	1.00E+00	5.00E+00	5.00E+04
Beryllium	10000	1.00E+00	5.00E+01	5.00E+05
Cadmium	10000	1.00E+00	5.00E+03	5.00E+07
Cyanide	100	4.00E-01	5.00E-01	2.00E+01
Methylene chloride	10	4.00E-01	5.00E+00	2.00E+01
Tetrachloroethene	100	4.00E-01	5.00E+01	2.00E+03
Toluene	10	4.00E-01	5.00E+01	2.00E+02

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Toxicity Value	Persistence Value	Bio- accum. Value	Toxicity/ Persistence/ Bioaccum. Value
1	Arsenic	10000	1.00E+00	5.00E+00	5.00E+04
1	Chloroform	100	4.00E-01	5.00E+00	2.00E+02
1	Methylene chloride	10	4.00E-01	5.00E+00	2.00E+01

Toxicity/Persistence/Bioaccumulation Value from Source Hazardous Substances:	5.00E+07
Toxicity/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	5.00E+04
Toxicity/Persistence/Bioaccumulation Factor:	5.00E+07
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	180

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

-----

- N/A and/or data not specified

Most Distant Level II Sample

-----

- N/A and/or data not specified

Level I Concentrations

Fishery	Annual Production (pounds)	Human Food Chain Population Value
-----		
- N/A and/or data not specified		

=====

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00



Level II Concentrations  
-----

Fishery	Annual Production (pounds)	Human Food Chain Population Value
---------	-------------------------------	--------------------------------------

-----  
- N/A and/or data not specified

=====  
Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00

Potential Contamination

	Annual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Value (Pi)	Dilution Weigt (Di)	Pi*Di
Fishery						
2 Sangamon R	1.0	River	101	0.0	1.00E-02	3.00E-04

Sum of (Pi\*Di): 3.00E-04

Potential Human Food Chain Contamination Factor: 3.00E-05

Documentation for Sangamon R Fishery:

Assumption

Reference:

Food Chain Individual

Location of Nearest Fishery: Sangamon R  
 Distance from the Probable Point of Entry: 0.05 miles  
 Type of Surface Water Body: River  
 Dilution Weight: 0.0100000  
 Level of Contamination: Potential

Food Chain Individual Factor: 0.00

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
Acetone	100	7.00E-04	5.00E-01	3.50E-02
Arsenic	10	1.00E+00	5.00E+01	5.00E+02
Beryllium	0	1.00E+00	5.00E+01	0.00E+00
Cadmium	1000	1.00E+00	5.00E+03	5.00E+06
Cyanide	1000	4.00E-01	5.00E-01	2.00E+02
Methylene chloride	1	4.00E-01	5.00E+00	2.00E+00
Tetrachloroethene	100	4.00E-01	5.00E+01	2.00E+03
Toluene	100	4.00E-01	5.00E+01	2.00E+03

Hazardous Substances Found in an Observed Release

Sample No.	Observed Release Hazardous Substance	Eco- toxicity Value	Persistence Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
1	Arsenic	10	1.00E+00	5.00E+01	5.00E+02
1	Chloroform	10	4.00E-01	5.00E+00	2.00E+01
1	Methylene chloride	1	4.00E-01	5.00E+00	2.00E+00

Ecotoxicity/Persistence/Bioaccummulation Value from Source Hazardous Substances:	5.00E+06
Ecotoxicity/Persistence/Bioaccummulation Value from Observed Release Hazardous Substances:	5.00E+02
Ecotoxicity/Persistence/Bioaccummulation Factor:	5.00E+06
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	100

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: S2  
Sample Medium: Aqueous  
Location: 1.00 miles

Hazardous Substance	Hazardous Substance Concentration	AWQC Benchmarks Concentrations		Units
		FRESH	SALT	
Arsenic	3.4E-03	1.9E+02	3.6E+01	ppb
Chloroform	8.0E+00	0.0E+01	0.0E+01	ppb
Methylene chloride	1.6E+01	0.0E+01	0.0E+01	ppb

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: S2  
Distance from the Probable Point of Entry: 1.00 miles

Level I Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
-----------------------	---	-----------------------------------

- N/A and/or data not specified

Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
---------	--	------------------------------

- N/A and/or data not specified

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level I Concentrations Factor: 0.00E+00

Level II Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
-----------------------	---	-----------------------------------

- N/A and/or data not specified

Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
---------	--	------------------------------

1 wetland	1.00	1.10
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Total Wetlands Frontage: 1.10 Miles Total Wetlands Value: 50

Sum of Sensitive Environments Value + Wetlands Value: 5.00E+01

Level II Concentrations Factor: 5.00E+01

Documentation for Sensitive Environment wetland:

Assumption

Reference:



Potential Contamination

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Sensitive Environments

-----

Type of Surface		Sensitive Environment
Water Body	Sensitive Environment	Value
-----		

Wetlands

-----

Type of Surface		Wetlands	Wetlands
Water Body	Sensitive Environment	Frontage	Value
-----			
- N/A and/or data not specified			

Type of Surface	Sum of Sens. Environment Values(Sj)	Sum of Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Dj (Wj+Sj)
Water Body				
----- - N/A and/or data not specified				

Sum of Dj (Wj+Sj): 0.00E+00  
 Sum of Dj (Wj+Sj)/10: 0.00E+00

=====

Potential Contamination Sensitive Environment Factor: 0.00E+00

Containment

No.	Source ID	HWQ Value	Containment Value
1	Disposal area	7.71E+01	10
Containment Factor			10

Net Precipitation

Net Precipitation (inches)	0.00
----------------------------	------

Aquifer: Glacial Aquifer

Type of Aquifer: Non Karst

Overlaying Aquifer: 0

Interconnected with: 0

OBSERVED RELEASE

No.	Well ID	Well Type	Distance (miles)	Level of Contamination
1	RW4	Drinking Water	0.010	Level I
2	mw	Monitoring Well	0.000	Level I

Well No.	Hazardous Substance	Concent.	MCL	Cancer	RFD	Units
1	Arsenic	8.1E+00	5.0E+01	2.0E-02	1.1E+01	ppb
2	Arsenic	8.1E+00	5.0E+01	2.0E-02	1.1E+01	ppb

=====

Observed Release Factor	550
-------------------------	-----

=====

Documentation for Well mw:

Assume monitoring well installed on-site. Arsenic concentration  
 same as in residential well

Reference:

POTENTIAL TO RELEASE

Ground Water to Surface Water Angle  
 -----

Probable Point of Entry	0.00	miles
Angle Theta (	180	

Containment  
 -----

Containment Factor	10	
--------------------	----	--

Net Precipitation  
 -----

Net Precipitation Factor	3	
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Depth to Aquifer  
 -----

A. Depth of Hazardous Substances	0.00	feet
B. Depth to Aquifer from Surface	23.00	feet
C. Depth to Aquifer (B - A)	23.00	feet
Depth to Aquifer Fator	5	

Travel Time  
 -----

Are All Layers Karst?	NO	
Thickness of Layer(s) with Lowest Conductivity	23.00	feet
Hydraulic Conductivity (cm/sec)	1.0E-04	

Documentation for Hydraulic Conductivity:

Assumption

Reference:

Travel Time Factor	25
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=====	
Potential to Release Factor	330

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Toxicity Factor Value	Persist. Value	Mobility Value	Toxicity/ Mobility/ Persistence
Acetone	10	7.00E-04	1.00E+00	7.00E-03
Arsenic	10000	1.00E+00	1.00E-02	1.00E+02
Beryllium	10000	1.00E+00	1.00E-02	1.00E+02
Cadmium	10000	1.00E+00	2.00E-01	2.00E+03
Cyanide	100	4.00E-01	2.00E-05	8.00E-04
Methylene chloride	10	4.00E-01	1.00E+00	4.00E+00
Tetrachloroethene	100	4.00E-01	1.00E-02	4.00E-01
Toluene	10	4.00E-01	1.00E-02	4.00E-02

Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance	Toxicity Factor Value	Persist. Value	Toxicity/ Persistence
-----	-----	-----	-----
Arsenic	10000	1.00E+00	1.00E+04



Toxicity/Mobility/Persistence Value from Source Hazardous Substances:	2.00E+03
Toxicity/Mobility/Persistence Value from Observed Release Hazardous Substances:	1.00E+04
Toxicity/Mobility/Persistence Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	32

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: S2  
Sample Medium: Aqueous  
Location: 1.00 miles

Hazardous Substance	Hazardous Substance Concentration	DW MCL Benchmark Concentration	Units	Observed in Upper Aquifer ?
Arsenic	3.4E-03	5.0E+01	ppb	YES
Chloroform	8.0E+00	0.0E+00	ppb	NO
Methylene chloride	1.6E+01	5.0E+00	ppb	NO

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: S2  
Distance from the Probable Point of Entry: 1.00 miles

Level I Concentrations

Intake	Distance Along the In-water Segment from the Probable Point of Entry (miles)	Population
--------	--	------------

- N/A and/or data not specified

Population Served by Level I Intakes: 0.0

Level I Population Factor: 0.00E+00

Level II Concentrations

-----  
Intake                      Distance Along the  
                            In-water Segment from the  
                            Probable Point of Entry (miles)      Population  
-----  
- N/A and/or data not specified

=====  
Population Served by Level II Intakes:                      0.0

Level II Population Factor: 0.00E+00

Potential Contamination  
-----

Intake ID	Average Annual Flow (cfs)	Population Served
-----		
- N/A and/or data not specified		

Type of Surface Water Body	Total Population	Dilution-Weighted Population
-----		
- N/A and/or data not specified		

=====

Dilution-Weighted Population Served by Potentially Contaminated Intakes:	0.0
---	-----

Potential Contamination Factor:	0.0
---------------------------------	-----

Nearest Intake  
-----

Location of Nearest Drinking Water Intake: N.A.

Nearest Intake Factor: 0.00

Resources  
-----

Resource Use: YES

Resource Value: 5.00E+00

Documentation for Resources:

ssumption

Reference:

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Toxicity Value	Persist. Value	Mobility Value	Bio- accum. Value	Tox./Mobil./ Persistence/ Bioaccum. Value
Acetone	10	7.00E-04	1.00E+00	5.00E-01	3.50E-03
Arsenic	10000	1.00E+00	1.00E-02	5.00E+00	5.00E+02
Beryllium	10000	1.00E+00	1.00E-02	5.00E+01	5.00E+03
Cadmium	10000	1.00E+00	2.00E-01	5.00E+03	1.00E+07
Cyanide	100	4.00E-01	2.00E-05	5.00E-01	4.00E-04
Methylene chloride	10	4.00E-01	1.00E+00	5.00E+00	2.00E+01
Tetrachloroethene	100	4.00E-01	1.00E-02	5.00E+01	2.00E+01
Toluene	10	4.00E-01	1.00E-02	5.00E+01	2.00E+00

Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance	Toxicity Value	Persist. Value	Bio- accum. Value	Toxicity/ Persistence Bioaccum. Value
Arsenic	10000	1.00E+00	5.00E+00	5.00E+04

Toxicity/Mobility/Persistence/Bioaccumulation Value from Source Hazardous Substances:	1.00E+07
Toxicity/Mobility/Persistence/Bioaccumulation Value from Observed Release Hazardous Substances:	5.00E+04
Toxicity/Mobility/Persistence/Bioaccumulation Factor:	1.00E+07
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Waste Characteristics Factor Category:	180



Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

- N/A and/or data not specified

Most Distant Level I Sample

-----

- N/A and/or data not specified

Most Distant Level II Sample

-----

- N/A and/or data not specified

Level I Concentrations

Fishery	Annual Production (pounds)	Human Food Chain Population Value
-----		
- N/A and/or data not specified		

=====

Sum of Human Food Chain Population Values: 0.00E+00

Level I Concentrations Factor: 0.00E+00

Level II Concentrations  
-----

Fishery	Annual Production (pounds)	Human Food Chain Population Value
-----		
- N/A and/or data not specified		

=====

Sum of Human Food Chain Population Values: 0.00E+00

Level II Concentrations Factor: 0.00E+00

Potential Contamination

Fishery	Annual Production (pounds)	Type of Surface Water Body	Average Annual Flow (cfs)	Pop. Dilution		Pi*Di
				Value (Pi)	Weight (Di)	
2 Sangamon R	1.0	River	101	0.0	5.00E-03	1.50E-04

Sum of (Pi\*Di): 1.50E-04

Potential Human Food Chain Contamination Factor: 1.50E-05

Documentation for Sangamon R Fishery:

Assumption

Reference:

Food Chain Individual

Location of Nearest Fishery: Sangamon R  
 Distance from the Probable Point of Entry: 0.05 miles  
 Type of Surface Water Body: River  
 Dilution Weight: 0.0050000  
 Level of Contamination: Potential

Food Chain Individual Factor: 0.00

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 77.06

Hazardous Substance	Eco- toxicity Value	Persist. Value	Mob. Value	Bio- accum. Value	Ecotoxicity/ Mobility/ Persistence/ Bioaccum. Value
Acetone	100	7.00E-04	1.00E+00	5.00E-01	3.50E-02
Arsenic	10	1.00E+00	1.00E-02	5.00E+01	5.00E+00
Beryllium	0	1.00E+00	1.00E-02	5.00E+01	0.00E+00
Cadmium	1000	1.00E+00	2.00E-01	5.00E+03	1.00E+06
Cyanide	1000	4.00E-01	2.00E-05	5.00E-01	4.00E-03
Methylene chloride	1	4.00E-01	1.00E+00	5.00E+00	2.00E+00
Tetrachloroethene	100	4.00E-01	1.00E-02	5.00E+01	2.00E+01
Toluene	100	4.00E-01	1.00E-02	5.00E+01	2.00E+01

Hazardous Substances Found in an Observed Release

Observed Release Hazardous Substance	Eco- toxicity Value	Persist. Value	Bio- accum. Value	Ecotoxicity/ Persistence/ Bioaccum. Value
-----				
Arsenic	10	1.00E+00	5.00E+01	5.00E+02

Ecotoxicity/Mobility/Persistence/Bioaccummulation Value from Source Substances:	1.00E+06
Ecotoxicity/Mobility/Persistence/Bioaccummulation Value from Observed Hazardous Substances:	5.00E+02
Ecotoxicity/Mobility/Persistence/Bioaccummulation Factor:	1.00E+06
Sum of Source Hazardous Waste Quantity Values:	7.71E+01
Hazardous Waste Quantity Factor:	100
Wase Characteristics Factor Category:	100

Level I Concentrations

- N/A and/or data not specified

Level II Concentrations

Sample ID: S2  
 Sample Medium: Aqueous  
 Location: 1.00 miles

Hazardous Substance	Hazardous Substance Concentration	AWQC Benchmark Concentrations		Units	Observed in Upper Aquifer ?
		FRESH	SALT		
Arsenic	3.4E-03	1.9E+02	3.6E+01	ppb	YES
Chloroform	8.0E+00	0.0E+01	0.0E+01	ppb	NO
Methylene chloride	1.6E+01	0.0E+01	0.0E+01	ppb	NO

Most Distant Level I Sample

- N/A and/or data not specified

Most Distant Level II Sample

Sample ID: S2  
 Distance from the Probable Point of Entry: 1.00 miles



Level I Concentrations

	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
Sensitive Environment		

- N/A and/or data not specified

Sum of Sensitive Environments Values: 0

Wetlands

	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
Wetland		

- N/A and/or data not specified

Total Wetlands Frontage: 0.00 Miles Total Wetlands Value: 0

Sum of Sensitive Environments Value + Wetlands Value: 0.00E+00

Level I Concentrations Factor: 0.00E+00

Level II Concentrations

Sensitive Environment	Distance from Probable Point of Entry to Sensitive Env. (miles)	Sensitive Environment Value
-----		
- N/A and/or data not specified		

Sum of Sensitive Environments Values: 0

Wetlands

Wetland	Distance from Probable Point of Entry to Wetland (miles)	Wetlands Frontage (miles)
-----		
1 wetland	1.00	1.10
-----		
Total Wetlands Frontage:	1.10 Miles	Total Wetlands Value: 50

=====

Sum of Sensitive Environments Value + Wetlands Value: 5.00E+01

Level II Concentrations Factor: 5.00E+01

Documentation for Sensitive Environment wetland:

Assumption

Reference:

Potential Contamination  
-----

Sensitive Environments  
-----

Type of Surface		Sensitive Environment Value
Water Body	Sensitive Environment	

-----

Wetlands  
-----

Type of Surface		Wetlands Frontage	Wetlands Value
Water Body	Sensitive Environment		

-----

- N/A and/or data not specified

Type of Surface	Sum of Sens. Environment Values(Sj)	Sum of Wetland Frontage Values(Wj)	Dilution Weight (Dj)	Dj (Wj+Sj)
Water Body				

-----  
 - N/A and/or data not specified

Sum of Dj (Wj+Sj): 0.00E+00  
 Sum of Dj (Wj+Sj)/10: 0.00E+00

=====

Potential Contamination Sensitive Environment Factor: 0.00E+00

Likelihood of Exposure

No. Source ID Level of Contamination

-----  
 1 Disposal area Level I  
 -----

Likelihood of Exposure Factor: 550

Source No.	Hazardous Substance	Depth (ft.)	Concent.	Cancer	RFD	Units
1	Acetone	< 2	3.1E+04	0.0E+00	5.8E+04	ppm
1	Arsenic	< 2	1.2E+01	3.3E-01	1.7E+02	ppm
1	Beryllium	< 2	6.5E-01	1.4E-01	2.9E+03	ppm
1	Cadmium	< 2	1.4E+01	0.0E+00	2.9E+02	ppm
1	Cyanide	< 2	2.5E+01	0.0E+00	1.2E+04	ppm
1	Methylene chloride	< 2	2.2E+04	7.8E+01	3.5E+04	ppm
1	Tetrachloroethene	< 2	1.3E+04	1.1E+01	5.8E+03	ppm
1	Toluene	< 2	8.0E-03	0.0E+00	1.2E+05	ppm

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 7.71

Hazardous Substance	Toxicity Value
Acetone	10
Arsenic	10000
Beryllium	10000
Cadmium	10000
Cyanide	100
Methylene chloride	10
Tetrachloroethene	100
Toluene	10

Toxicity Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	7.71E+00
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	18

Targets

-----

Level I Population:	0.0	Value:	0.00
Level II Population:	0.0	Value:	0.00
Workers:	25.0	Value:	5.00

Documentation for Workers:

assumption

Reference:

Resident Individual:	Potentia	Value:	0.00
Resources:	NO	Value:	0.00

Terrestrial Sensitive Environment	Value
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-----

- N/A and/or data not specified

=====

Terrestrial Sensitive Environments Factor: 0.00



Likelihood of Exposure

No. Source ID	Level of Contamination	Attractiveness/ Accessibility	Area of Contam. (sq. feet)
1 Disposal area	Level I	10	262000
-----			
Highest Attractiveness/Accessibility Value:		10	
Sum of Eligible Areas Of Contamination (sq. feet):			262000
Area of Contamination Value: 60			

Likelihood of Exposure Factor Category: 25

Source Hazardous Substance No.	Depth (ft.)	Concent.	Cancer	RFD	Units
1 Acetone	< 2	3.1E+04	0.0E+00	5.8E+04	ppm
1 Arsenic	< 2	1.2E+01	3.3E-01	1.7E+02	ppm
1 Beryllium	< 2	6.5E-01	1.4E-01	2.9E+03	ppm
1 Cadmium	< 2	1.4E+01	0.0E+00	2.9E+02	ppm
1 Cyanide	< 2	2.5E+01	0.0E+00	1.2E+04	ppm
1 Methylene chloride	< 2	2.2E+04	7.8E+01	3.5E+04	ppm
1 Tetrachloroethene	< 2	1.3E+04	1.1E+01	5.8E+03	ppm
1 Toluene	< 2	8.0E-03	0.0E+00	1.2E+05	ppm

Source: 1 Disposal area

Source Hazardous Waste Quantity Value: 7.71

Hazardous Substance	Toxicity Value
Acetone	10
Arsenic	10000
Beryllium	10000
Cadmium	10000
Cyanide	100
Methylene chloride	10
Tetrachloroethene	100
Toluene	10

Toxicity Factor:	1.00E+04
Sum of Source Hazardous Waste Quantity Values:	7.71E+00
Hazardous Waste Quantity Factor:	10
Waste Characteristics Factor Category:	18

Nearby Individual

-----

Population within 1/4 mile: 25.0

Nearby Individual Value: 1.0

Population Within 1 Mile

-----

Travel Distance Category	Number of People	Value
-----		
> 0 to 1/4 mile	25.0	0.0
> 1/4 to 1/2 mile	50.0	0.1
> 1/2 to 1 mile	1000.0	0.3
-----		

Population Within 1 Mile Factor: 0.4

Documentation for Population > 0 to 1/4 mile Distance Category:

300 people within 1-mile radius. Assume 100 people within each distance category.

Reference:

OBSERVED RELEASE

No. Sample ID	Distance (miles)	Level of Contamination
---------------	---------------------	------------------------

-----  
- N/A and/or data not specified

=====

Observed Release Factor:	0
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Gas Migration Potential

GAS POTENTIAL TO RELEASE

Source ID	Source Type	Gas Contain. Value (A)	Gas Source Type Value (B)	Gas Migrtn. Potent. Value (C)	Sum (B+C)	Gas Potential to Rel. Value A(B+C)
-----------	-------------	------------------------------	------------------------------------	--	--------------	--

- N/A and/or data not specified

Gas Potential to Release Factor: 0

Source: Disposal area

Gaseous Hazardous Substance	Hazardous Substance Gas Migration Potential Value
Acetone	17
Methylene chloride	17
Tetrachloroethene	17
Toluene	17

Average of Gas Migration Potential Value for 3 Hazardous Substances: 17.000  
=====

Gas Migration Potential Value From Table 6-7: 17

Particulate Migration Potential

PARTICULATE POTENTIAL TO RELEASE

Source ID	Source Type	Partic. Contain. Value (A)	Partic. Source Type Value (B)	Partic. Migrtn. Potent. Value (C)	Sum (B+C)	Partic. Potential to Rel. Value A(B+C)
-----						
- N/A and/or data not specified						
-----						

Particulate Potential to Release Factor: 0



AIR PATHWAY LIKELIHOOD OF RELEASE

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

Source: Disposal area

Particulate Hazardous Substance

---

Arsenic

Beryllium

Cadmium

Cyanide

Hazardous Substance	Toxicity Value	Gas Mobility Value	Particulate Mobility Value	Toxicity/ Mobility Value
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## AIR PATHWAY WASTE CHARACTERISTICS

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

## Hazardous Substances Found in an Observed Release

Sample Observed Release ID Hazardous Substance	Particulate Toxicity/ Mobility Value	Gas Toxicity/ Mobility Value
---	--	------------------------------------

-----  
- N/A and/or data not specified

- N/A and/or data not specified

Toxicity/Mobility Value from Observed Release Hazardous  
Substances:

0.00E+00

Toxicity/Mobility Factor:

0.00E+00

Sum of Source Hazardous Waste Quantity Values:

0.00E+00

Hazardous Waste Quantity Factor:

0

Waste Characteristics Factor Category:

0

AIR PATHWAY TARGETS

Murrell Landfill (Murrell Disposal Facility) - 09/13/95

## Actual Contamination

No. Sample ID	Distance (miles)	Level of Contamination
---------------	---------------------	------------------------

-----

- N/A and/or data not specified

## Potential Contamination

-----

Distance Categories Subject  
to Potential Contamination

Population

Value

-----

Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000
Potential Contaminantion Factor:	0.0000

doc here

Nearest Individual Factor

-----

Distance in miles: Potentia

- N/A and/or data not specified

doc here

Resources

-----

Resource Value: 4.935386517845698360000000000000000000000000e+257

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Actual Contamination, Sensitive Environments

Sensitive Environment	Distance (miles)	Sensitive Environment Value
-----		
-----		
- N/A and/or data not specified		

Actual Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value
-----		
-----		
- N/A and/or data not specified		

=====

(Sum of Sensitive Environments + Wetlands Values)

## Potential Contamination, Sensitive Environments

	Sensitive			
	Environment	Distance	Weighted	
Sensitive Environment	(miles)	Value	Distance Weight	Value/10
(null)	4.935385843404746150000000000000000000000000e+257			
Sum of Sensitive Environments Weighted Values/10:				0.000

## Potential Contamination, Wetlands

Distance Category	Wetland Acreage	Wetland Acreage Value	Distance Weight	Weighted Value/10
-----				
-----				
- N/A and/or data not specified				

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REFERENCES

Murrell Landfill (Murrell Disposal Facility) - 09/13/95